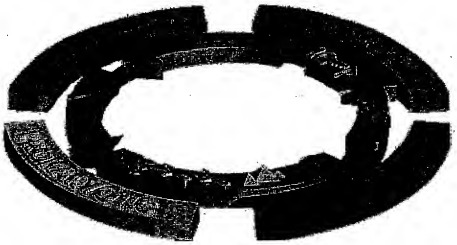
Anatomy of a Vector



Promoter

DNA sequence to which RNA polymerase binds and initiates transcription. The promoter determines the polarity of the transcript by specifying which strand will be transcribed.

- Bacterial promoters consist of -35 and -10 (relative to the transcriptional start) consensus sequences which are bound by a specific sigma factor and RNA polymerase.
- Eukaryotic promoters are more complex. Most promoters utilized in expression vectors are transcribed by RNA polymerase II. General transcription factors (GTFs) first bind specific sequences near the transcriptional start and then recruit the binding of RNA polymerase II. In addition to these minimal promoter elements, small sequence elements are recognized specifically by modular DNA-binding / trans-activating proteins (e.g. AP-1, SP-1) which regulate the activity of a given promoter.
- Viral promoters serve the same function as bacterial or eukaryotic promoters and either provide a specific RNA polymerase in trans (bacteriophage T7) or recruit cellular factors and RNA polymerase (SV40, RSV, CMV). Viral promoters are often found in vectors because they are strong promoters.

Inducible elements

- DNA sequence elements which act in conjunction with promoters and bind either repressors (e.g., lacO/ LAC Iq repressor system in E. coli) or inducers (e.g., gal1 /GAL4 inducer system in yeast). In either case, transcription is virtually "shut off" until the promoter is derepressed or induced, at which point transcription is "turned-on".

Stabilizing and optimizing elements

In prokaryotes, a[redacted]termination elements help to keep the[redacted]A polymerase from falling off the DNA template, ensuring optimal transcript elongation during message synthesis. The resulting RNA can be polycistronic; more than one protein is translated from a single RNA molecule. Mini-cistrons are small open reading frames engineered upstream of the coding sequence of interest to encourage ribosomes to bind and efficiently translate the sequence of interest. A Shine-Dalgarno (ribosome binding site) sequence is required just upstream of an AUG (translational start) for efficient translation initiation.

- In eukaryotes, heterogeneous nuclear RNA (hnRNA) molecules, newly transcribed by RNA polymerase II are capped at the 5' terminus, spliced, and polyadenylated as they are processed into stable messenger RNA (mRNA) molecules. These modifications are important for transport and translation of most messages and add stability to the molecule. While eukaryotic translation typically initiates at the first (5' most) AUG, certain nucleotides (Kozak sequence) near an AUG can increase the translation initiation efficiency from that AUG.

Transcriptional termination sequences

- In prokaryotes, sequences known as transcriptional terminators signal the RNA polymerase to release the DNA template and stop transcription of the nascent RNA.
- In eukaryotes, RNA molecules are transcribed well beyond the end of the mature mRNA molecule. New transcripts are enzymatically cleaved and modified by the addition of 100-200 adenylic acid residues known as the poly-A tail. Polyadenylation consensus sequence is located about 10 to 30 bases upstream from the actual cleavage site.

Origin of DNA Replication

- DNA sequence which binds DNA polymerase and associated factors involved in the generation of an exact copy of the original molecule.
- In both prokaryotes and eukaryotes, replication occurs in a semi-conservative manner and proceeds from a replication fork. DNA polymerase synthesizes complementary DNA 5' to 3'.
- Some eukaryotic viral origins require specific nuclear antigens for replication in addition to the cellular replication machinery. Examples include the EBV oriP/ EBNA-1 system and the SV40 origin/SV40 large T antigen system.

Affinity purification Tag

- Synthetic DNA sequence encoding six consecutive histidines which, when fused to the expressed protein, may be used for one-step purification of the recombinant protein by high affinity binding to a nickel column. An endopeptidase recognition sequence is engineered between the affinity tag and the protein of interest to allow subsequent removal of the leader peptide by digestion with Enterokinase.

Multiple cloning sites (MCS or Polylinker)

- Synthetic DNA sequence encoding a series of restriction endonuclease recognition sites. These sites are engineered for convenient cloning of DNA into a vector at a specific position.

Selectable markers

Provide a means to select, for growth, only those cells which contain a vector. Such markers are of two types: drug resistance and auxotrophic. A drug resistance marker enables cells to detoxify an exogenously added drug that would otherwise kill the cell. Auxotrophic markers allow cells to synthesize an essential component (usually an amino acid) in media which lacks that essential component.

Common selectable markers with a brief description of their mode of action follow:

Prokaryotic

- Ampicillin: interferes with a terminal reaction in bacterial cell wall synthesis. The resistance gene (bla) encodes beta-lactamase which cleaves the beta-lactam ring of the antibiotic thus detoxifying it.
- Tetracycline: prevents bacterial protein synthesis by binding to the 30S ribosomal subunit. The resistance gene (tet) specifies a protein that modifies the bacterial membrane and prevents transport of the antibiotic into the cell.
- Kanamycin: binds to the 70S ribosomes and causes misreading of messenger RNA. The resistant gene (Km) modifies the antibiotic and prevents interaction with the ribosome.
- Streptomycin: binds to the 30S ribosomal subunit, causing misreading of messenger RNA. The resistance gene (Sm) modifies the antibiotic and prevents interaction with the ribosome.
- Zeocin: this new bleomycin-family antibiotic interchelates into the DNA and cleaves it. The Zeocin resistance gene encodes a 13,665 dalton protein. This protein confers resistance to Zeocin by binding to the antibiotic and preventing it from binding DNA. Zeocin is effective on most aerobic cells and can be used for selection in mammalian cell lines, yeast, and bacteria.

Eukaryotic

- Hygromycin: a aminocyclitol that inhibits protein synthesis by disrupting ribosome translocation and promoting mistranslation. The resistance gene (hph) detoxifies hygromycin -B- phosphorylation.
- Histidinol: cytotoxic to mammalian cells by inhibiting histidyl-tRNA synthesis in histidine free media. The resistance gene (hisD) product inactivates histidinol toxicity by converting it to the essential amino acid, histidine.
- Neomycin (G418): blocks protein synthesis by interfering with ribosomal functions. The resistance gene ADH encodes amino glycoside phosphotransferase which detoxifies G418.
- Uracil: Laboratory yeast strains carrying mutations gene which encodes orotidine -5'-phosphate decarboxylase, an enzyme essential for uracil biosynthesis, are unable to grow in the absence of exogenous uracil. A copy of the wild-type gene (ura4+, S. pombe or URA3 S. cerevisiae) carried on the vector will complement this defect in trans.

- Zeocin: this new bleomycin-family antibiotic interchelates into the DNA and cleaves it. The Zeocin resistance gene encodes a 13,665 dalton protein. This protein confers resistance to Zeocin by binding to the antibiotic and preventing it from binding DNA. Zeocin is effective on most aerobic cells and can be used for selection in mammalian cell lines, yeast, and bacteria.

Plasmid Vectors

Complete Plasmid Vectors

- All Complete Sequences 120 kb!
  - Complete Sequences Starting 0-9,A-PD 28 kb!
  - Complete Sequences Starting PE-PK 35 kb!
  - Complete Sequences Starting PL-PS 38 kb!
  - Complete Sequences Starting PT-Z 22 kb!

Incomplete Plasmid Vectors

- All Incomplete Sequences 195 kb!
  - Incomplete Sequences Starting 0-9,A-PD 55 kb!
  - Incomplete Sequences Starting PE-PK 55 kb!
  - Incomplete Sequences Starting PL-PS 65 kb!
  - Incomplete Sequences Starting PT-Z 55 kb!

All Plasmid Vectors

- All Sequences 310 kb!

Return to Vector db Homepage

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Return to Vector db Homepage

Phagemid Vectors

- E. coli phagemid vector BSB- - complete..
- E. coli phagemid vector BSB+ - complete..
- E. coli phagemid vector pAcUW31 - complete..
- E. coli phagemid vector pAD3 - complete..
- E. coli phagemid vector pALTER-1 (formerly pSELECT-1) - complete..
- Cloning vector pALTER[R]-Ex1, complete sequence.
- Cloning vector pALTER[R]-Ex2, complete sequence.
- E. coli phagemid vector pAMP1 - complete..
- E. coli phagemid vector pAMP10 - complete..
- E. coli phagemid vector pAMP18 - complete..
- E. coli phagemid vector pAMP19 - complete..
- E. coli phagemid vector pAMP2 - complete..
- C. elegans phagemid vector pAST18a - complete..
- C. elegans phagemid vector pAST18b - complete..
- C. elegans phagemid vector pAST19a - complete..
- C. elegans phagemid vector pAST19b - complete..
- E. coli phagemid vector pAX4a- - complete..
- E. coli phagemid vector pAX4a+ - complete..
- E. coli phagemid vector pAX4b- - complete..
- E. coli phagemid vector pAX4b+ - complete..
- E. coli phagemid vector pAX4c- - complete..
- E. coli phagemid vector pAX4c+ - complete..

- E. coli phagemid vector pAX5- - complete..
- E. coli phagemid vector pAX5+ - complete..
- E. coli phagemid vector pBacPAK1 - complete..
- E. coli phagemid vector pBacPAK8 - complete..
- E. coli phagemid vector pBacPAK9 - complete..
- E. coli phagemid vector pBC KS(-) - complete..
- E. coli phagemid vector pBC KS(+) - complete..
- E. coli phagemid vector pBC SK(-) - complete..
- E. coli phagemid vector pBC SK(+) - complete..
- E. coli phagemid vector pBGS9- - complete..
- E. coli phagemid vector pBGS9+ - complete..
- Vertebrate/E.coli phagemid vector pBLCAT3.f1 - complete..
- E. coli phagemid vector pBluescript II KS(-) - complete..
- E. coli phagemid vector pBluescript II KS(+) - complete..
- E. coli phagemid vector pBluescript II SK(-) - complete..
- E. coli phagemid vector pBluescript II SK(+) - complete..
- E. coli phagemid vector pBluescript KS(-) - complete..
- E. coli phagemid vector pBluescript KS(+) - complete..
- E. coli phagemid vector pBluescript SK(-) - complete..
- E. coli phagemid vector pBluescript SK(+) - complete..
- E. coli phagemid vector pBP9 - complete..
- E. coli phagemid vector pBS - complete..
- E. coli phagemid vector BlueScribe KS- - complete..
- E. coli phagemid vector BlueScribe KS+ - complete..

- E. coli phagemid vector pBS- - complete..
- E. coli phagemid vector pBSM13- or BlueScribe M13- - complete..
- E. coli phagemid vector pBSM13+ or BlueScribe M13+ - complete..
- E. coli phagemid vector pBS+ - complete..
- E. coli phagemid vector BlueScribe SK- - complete..
- E. coli phagemid vector BlueScribe SK+ - complete..
- E. coli phagemid vector pBTac1 - complete..
- E. coli phagemid vector pBT2 - complete..
- E. coli phagemid vector pCDM8 - complete..
- E. coli phagemid vector pcDNA3 - complete..
- E. coli phagemid vector pcDNAI - complete..
- E. coli phagemid vector pcDNAIAmp - complete..
- E. coli phagemid vector pcDNAII - complete..
- E. coli phagemid vector pcDNAINeo - complete..
- E. coli phagemid vector pCF20 - complete..
- Cloning vector pCI, mammalian expression vector, complete sequence.
- Cloning vector pCI-neo, mammalian expression vector, complete sequence.
- E. coli phagemid vector pCR1000 - complete..
- E. coli phagemid vector pCRII - complete..
- E. coli phagemid vector pD4 - complete..
- E. coli phagemid vector pDW227 - complete..
- E. coli phagemid vector pDW229 - complete..
- E. coli phagemid vector pDW232 - complete..
- E. coli phagemid vector pEMBL18-Not (Sma-) - complete..

- Saccharomyces/E.coli phagemid vector pEMBLYe23 - complete..
- Saccharomyces/E.coli phagemid vector pEMBLYe24 - complete..
- Saccharomyces/E.coli phagemid vector pEMBLYi21 - complete..
- Saccharomyces/E.coli phagemid vector pEMBLYi22 - complete..
- Saccharomyces/E.coli phagemid vector pEMBLYi32 - complete..
- Saccharomyces/E.coli phagemid vector pEMBLYr25 - complete..
- E. coli phagemid vector pEX1 - complete..
- E. coli phagemid vector pEX2 - complete..
- E. coli phagemid vector pEX3 - complete..
- E. coli phagemid vector pExCell - complete..
- E. coli phagemid vector pEZZ18 - complete..
- Saccharomyces/E.coli phagemid vector pFL59- - complete..
- Saccharomyces/E.coli phagemid vector pFL59+ - complete..
- Saccharomyces/E.coli phagemid vector pFL64- - complete..
- Saccharomyces/E.coli phagemid vector pFL64+ - complete..
- E. coli phagemid vector pGEM-1 - complete..
- E. coli phagemid vector pGEM-11Zf- - complete..
- E. coli phagemid vector pGEM-11Zf+ - complete..
- E. coli phagemid vector pGEM-13Zf+ - complete..
- E. coli phagemid vector pGEM-2 - complete..
- E. coli phagemid vector pGEM-3 - complete..
- E. coli phagemid vector pGEM-3Zf- - complete..
- E. coli phagemid vector pGEM-3Zf+ - complete..
- E. coli phagemid vector pGEM-4 - complete..

- E. coli phagemid vector pGEM-5Zf+ - complete..
- E. coli phagemid vector pGEM-7Zf- - complete..
- E. coli phagemid vector pGEM-7Zf+ - complete..
- E. coli phagemid vector pGEM-9Zf- - complete..
- E. coli phagemid vector pGEM-luc - complete..
- E. coli phagemid vector pGEM-T - complete..
- Broad host range/E.coli plasmid vector pGhost4 - complete..
- Broad host range/E.coli plasmid vector pGhost5 - complete..
- Broad host range/E.coli plasmid vector pGhost6 - complete..
- E. coli phagemid vector pGL2-Basic - complete..
- E. coli phagemid vector pGL2-Enhancer - complete..
- Cloning vector pGL3-Basic, luciferase gene, promoter analysis.
- Cloning vector pGL3-Control, luciferase gene, promoter analysis.
- Cloning vector pGL3-Enhancer, luciferase gene, promoter analysis.
- Cloning vector pGL3-Promoter, luciferase gene, promoter analysis.
- E. coli phagemid vector pGUSN358-S - complete..
- E. coli phagemid vector PhageScript SK - complete..
- E. coli phagemid vector pHph0 - complete..
- E. coli phagemid vector pHph-1 - complete..
- E. coli phagemid vector pHph+1 - complete..
- E. coli phagemid vector pICEM19H- - complete..
- E. coli phagemid vector pICEM19H+ - complete..
- E. coli phagemid vector pICEM19R- - complete..
- E. coli phagemid vector pICEM19R+ - complete..

- Vertebrate/E.coli phagemid vector pJFCAT1 - complete..
- E. coli phagemid vector pKK161-8 - complete..
- E. coli phagemid vector pko - complete..
- E. coli phagemid vector pKO-neo - complete..
- E. coli phagemid vector pKSM710 - complete..
- E. coli phagemid vector pKSM711 - complete..
- E. coli phagemid vector pKSM713 - complete..
- E. coli phagemid vector pKSM715 - complete..
- E. coli phagemid vector pKUN9 - complete..
- E. coli phagemid vector pKUN9 - complete..
- E. coli phagemid vector pLH1 - complete..
- E. coli plasmid vector pMAL-c [tm] - complete..
- E. coli plasmid vector pMAL-c2 [tm] - complete..
- E. coli plasmid vector pMAL-cRI [tm] - complete..
- E. coli plasmid vector pMAL-p [tm] - complete..
- E. coli plasmid vector pMAL-p2 [tm] - complete..
- E. coli phagemid vector pMEX5 - complete..
- E. coli phagemid vector pMEX6 - complete..
- E. coli phagemid vector pMEX7 - complete..
- E. coli phagemid vector pNEB193 - complete..
- E. coli phagemid vector pON163 - complete..
- E. coli phagemid vector pPL-lambda - complete..
- E. coli phagemid vector pRcCMV - complete..
- E. coli phagemid vector pRcRSV - complete..

- E. coli phagemid vector pRIT2T - complete..
- Saccharomyces/E.coli phagemid vector pRS200 - complete..
- Saccharomyces/E.coli phagemid vector pRS303 - complete..
- Saccharomyces/E.coli phagemid vector pRS304 - complete..
- Saccharomyces/E.coli phagemid vector pRS305 - complete..
- Saccharomyces/E.coli phagemid vector pRS306 - complete..
- Saccharomyces/E.coli phagemid vector pRS313 - complete..
- Saccharomyces/E.coli phagemid vector pRS314 - complete..
- Saccharomyces/E.coli phagemid vector pRS315 - complete..
- Saccharomyces/E.coli phagemid vector pRS316 - complete..
- Saccharomyces/E.coli phagemid vector pRS403 - complete..
- Saccharomyces/E.coli phagemid vector pRS404 - complete..
- Saccharomyces/E.coli phagemid vector pRS405 - complete..
- Saccharomyces/E.coli phagemid vector pRS406 - complete..
- Saccharomyces/E.coli phagemid vector pRS413 - complete..
- Saccharomyces/E.coli phagemid vector pRS414 - complete..
- Saccharomyces/E.coli phagemid vector pRS415 - complete..
- Saccharomyces/E.coli phagemid vector pRS416 - complete..
- Saccharomyces/E.coli phagemid vector pRS423 - complete..
- Saccharomyces/E.coli phagemid vector pRS424 - complete..
- Saccharomyces/E.coli phagemid vector pRS425 - complete..
- Saccharomyces/E.coli phagemid vector pRS426 - complete..
- E. coli phagemid vector pRSETA - complete..
- E. coli phagemid vector pRSETB - complete..

- E. coli phagemid vector pRSETC - complete..
- Saccharomyces/E.coli phagemid vector pRSS56 - complete..
- Cloning vector pSI, mammalian expression vector, complete sequence.
- E. coli phagemid vector pSK222 - complete..
- E. coli phagemid vector pSK241 - complete..
- E. coli phagemid vector pSL1180 - complete..
- E. coli phagemid vector pSL1190 - complete..
- E. coli phagemid vector pSL301 - complete..
- E. coli phagemid vector pSP18 - complete..
- E. coli phagemid vector pSP19 - complete..
- E. coli phagemid vector pSP64 - complete..
- E. coli phagemid vector pSP64-f1- - complete..
- E. coli phagemid vector pSP64-f1+ - complete..
- E. coli phagemid vector pSP64 polyA - complete..
- E. coli phagemid vector pSP65-f1+ - complete..
- E. coli phagemid vector pSP6-T3 - complete..
- E. coli phagemid vector pSP6-T7-19 - complete..
- E. coli phagemid vector pSP70 - complete..
- E. coli phagemid vector pSP71 - complete..
- E. coli phagemid vector pSP72 - complete..
- E. coli phagemid vector pSP73 - complete..
- E. coli phagemid vector pSPORT1 - complete..
- E. coli phagemid vector pSPORT2 - complete..
- E. coli phagemid vector pSPT18 - complete..

- E. coli phagemid vector pSPT19 - complete..
- E. coli phagemid vector pSPTbm20 - complete..
- E. coli phagemid vector pSPTbm21 - complete..
- E. coli phagemid vector pSS24 - complete..
- E. coli phagemid vector pSS25 - complete..
- E. coli phagemid vector pSVK3 - complete..
- E. coli phagemid vector pSV-SPORT1 - complete..
- E. coli phagemid vector pT3T7BM - complete..
- E. coli phagemid vector pT3T7-lac - complete..
- E. coli phagemid vector pT3T7-luc - complete..
- E. coli phagemid vector pT7-0 - complete..
- E. coli phagemid vector pT7-1 - complete..
- E. coli phagemid vector pT7-2 - complete..
- E. coli phagemid vector pT7SP6 - complete..
- E. coli phagemid vector pT7T3-18 - complete..
- E. coli phagemid vector pT7T3-18D - complete..
- E. coli phagemid vector pT7T3-18U - complete..
- E. coli phagemid vector pT7T3-19 - complete..
- E. coli phagemid vector pT7T3-19U - complete..
- E. coli phagemid vector pT7T3alpha-18 - complete..
- E. coli phagemid vector pT7T3alpha-19 - complete..
- Vertebrate/E.coli phagemid vector pTF1 - complete..
- E. coli phagemid vector pTRXN- - complete..
- E. coli phagemid vector pTRXN+ - complete..

- E. coli phagemid vector pTZ18R - complete..
- E. coli phagemid vector pTZ18U - complete..
- E. coli phagemid vector pTZ19R - complete..
- E. coli phagemid vector pTZ19U - complete..
- E. coli phagemid vector pTZSV28 - complete..
- E. coli phagemid vector pUC118 - complete..
- E. coli phagemid vector pUC119 - complete..
- E. coli phagemid vector pUC12 - complete..
- E. coli phagemid vector pUC12c - complete..
- E. coli phagemid vector pUC13 - complete..
- E. coli phagemid vector pUC13c - complete..
- E. coli phagemid vector pUC18 - complete..
- E. coli phagemid vector pUC18c - complete..
- Photinus pyralis pUC18-luciferase - complete..
- E. coli phagemid vector pUC19 - complete..
- E. coli phagemid vector pUC1918 - complete..
- E. coli phagemid vector pUC19c - complete..
- E. coli phagemid vector pUC3 - complete..
- E. coli phagemid vector pUC4 - complete..
- E. coli phagemid vector pUC5 - complete..
- E. coli phagemid vector pUC7 - complete..
- E. coli phagemid vector pUC7c - complete..
- E. coli phagemid vector pUC8 - complete..
- E. coli phagemid vector pUC8-1 - complete..

- E. coli phagemid vector pUC8-2 - complete..
- E. coli phagemid vector pUC830 - complete..
- E. coli phagemid vector pUC8c - complete..
- E. coli phagemid vector pUC9 - complete..
- E. coli phagemid vector pUC9-1 - complete..
- E. coli phagemid vector pUC9-2 - complete..
- E. coli phagemid vector pUC9c - complete..
- E. coli phagemid vector pUC9tet - complete..
- E. coli phagemid vector pUCbm20 or pUCPZ2 - complete..
- E. coli phagemid vector pUCbm21 - complete..
- E. coli phagemid vector pUCGM - incomplete..
- E. coli phagemid vector pUCP18 - complete..
- E. coli phagemid vector pUCP20 - complete..
- E. coli phagemid vector pUCP22 - complete..
- E. coli phagemid vector pUCP24 - complete..
- E. coli phagemid vector pUCP26 - complete..
- E. coli phagemid vector pUR1 - complete..
- E. coli plasmid vector pWM521 - complete..
- Vertebrate/E.coli phagemid vector pXPRS- or pcDpolyB- - complete..
- Vertebrate/E.coli phagemid vector pXPRS+ or pcDpolyB+ - complete..
- E. coli phagemid vector pYES2 - complete..
- E. coli phagemid vector pYESHisA - complete..
- E. coli phagemid vector pYESHisB - complete..
- E. coli phagemid vector pYESHisC - complete..

- Saccharomyces/E.coli phagemid pAS1 - incomplete..
- Yeast/E.coli phagemid vector pAS2 - incomplete..
- Saccharomyces/E.coli phagemid vector pASZ10 - incomplete..
- E. coli phagemid vector pBGS130- - incomplete..
- E. coli phagemid vector pBGS130+ - incomplete..
- E. coli phagemid vector pBGS131- - incomplete..
- E. coli phagemid vector pBGS131+ - incomplete..
- E. coli phagemid vector pBGS18- - incomplete..
- E. coli phagemid vector pBGS18+ - incomplete..
- E. coli phagemid vector pBGS19- - incomplete..
- E. coli phagemid vector pBGS19+ - incomplete..
- E. coli phagemid vector pBGS8- - incomplete..
- E. coli phagemid vector pBI221 - incomplete..
- E. coli phagemid vector pBK-CMV - incomplete..
- E. coli phagemid vector pBK-RSV - incomplete..
- Trypanosoma/E.coli phagemid vector pBNsp-Neo-Alpha - incomplete..
- E. coli phagemid vector pCR-Script SK(+) - incomplete..
- E. coli phagemid vector pDELTA2 - incomplete..
- E. coli phagemid vector pDK101 - incomplete..
- Saccharomyces/E.coli phagemid vector pEMBLYe30 - incomplete..
- Saccharomyces/E.coli phagemid vector pEMBLYe31 - incomplete..
- Saccharomyces/E.coli phagemid vector pEMBLYi27 - incomplete..
- E. coli phagemid pHisGal - incomplete..
- Saccharomyces/E.coli phagemid vector pJA50 - incomplete..

- Saccharomyces/E.coli phagemid vector pJA51 - incomplete..
- Saccharomyces/E.coli phagemid vector pJA52 - incomplete..
- Saccharomyces/E.coli phagemid vector pJA53 - incomplete..
- Streptomyces/E.coli phagemid vector pKC1064 - incomplete..
- Vertebrate/E.coli phagemid vector pLUC - incomplete..
- Vertebrate/E.coli phagemid vector pLUCS - incomplete..
- E. coli phagemid vector pMA200U - incomplete..
- Insect/E. coli phagemid vector pMbac - incomplete..
- E. coli phagemid vector pMGU - incomplete..
- Mammal/E. coli phagemid vector pOG44 - incomplete..
- Mammal/E. coli phagemid vector pOG45 - incomplete..
- E. coli plasmid vector pOK12 - incomplete, MCS..
- Mammal/E. coli phagemid vector pOPI3 CAT - incomplete..
- Mammal/E. coli phagemid vector pOPRSVI CAT - complete..
- Insect/E. coli phagemid vector pPbac - incomplete..
- E. coli phagemid vector pRIT17 - incomplete..
- Saccharomyces/E.coli phagemid vector pRS166 - incomplete..
- Saccharomyces/E.coli phagemid vector pRS167 - incomplete..
- Saccharomyces/E.coli phagemid vector pRS169 - incomplete..
- Saccharomyces/E.coli phagemid vector pRS173 - incomplete..
- Saccharomyces/E.coli phagemid vector pRS202 - incomplete..
- Saccharomyces/E.coli phagemid vector pRS317 - incomplete..
- Saccharomyces/E.coli phagemid vector pRS318 - incomplete..
- Vertebrate/E.coli phagemid vector pRSVADH - incomplete..

- Vertebrate/E.coli phagemid vector pRSVlacZII - incomplete..
- Vertebrate/E.coli phagemid vector pRSVPAP - incomplete..
- Vertebrate/E.coli phagemid vector pSHT - incomplete..
- Vertebrate/E.coli phagemid vector pSV0Apap - incomplete..
- Vertebrate/E.coli phagemid vector pSV232Apap - incomplete..
- Vertebrate/E.coli phagemid vector pSV2Apap - incomplete..
- E. coli phagemid vector pT7-7 - incomplete..
- E. coli phagemid vector pT7-7A - incomplete..
- E. coli phagemid vector pT7-SCA - incomplete..
- E. coli phagemid vector pT7-SCII - incomplete..
- Vertebrate/E.coli phagemid vector pTAG-1 - incomplete..
- Vertebrate/E.coli phagemid vector pTAG4 - incomplete..
- E. coli plasmid vector pUC21 - incomplete, MCS..
- E. coli plasmid vector pUC6S - incomplete, MCS..
- E. coli plasmid vector pUK21 - incomplete, MCS..
- Saccharomyces/E.coli phagemid vector pUN30 - incomplete..
- Saccharomyces/E.coli phagemid vector pUN70 - incomplete..
- E. coli phagemid vector pZL1 - incomplete..

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Phasmid Vectors

- E. coli phasmid vector pEMBL18- - complete.
- E. coli phasmid vector pEMBL18+ - complete.
- E. coli phasmid vector pEMBL19- - complete.
- E. coli phasmid vector pEMBL19+ - complete.
- E. coli phasmid vector pEMBL8- - complete.
- E. coli phasmid vector pEMBL8+ - complete.
- E. coli phasmid vector pEMBL9- - complete.
- E. coli phasmid vector pEMBL9+ - complete.
- E. coli plasmid vector lambda SK - incomplete.

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Cosmid Vectors

- E. coli cosmid vector Loric - complete.
- E. coli cosmid vector Lorist2 - complete.
- E. coli cosmid vector LoristB - complete.
- E. coli cosmid vector LoristE6 - complete.
- E. coli cosmid vector MUA-3 - complete.
- E. coli cosmid vector pAA113M - complete.
- E. coli cosmid vector pDO184 - complete.
- E. coli cosmid vector pDO19 - complete.
- E. coli cosmid vector pDO2 - complete.
- E. coli cosmid vector pDO6 - complete.
- Actinomycetes/E.coli cosmid vector pFD666 - complete.
- E. coli cosmid vector pHC79 - complete.
- E. coli cosmid vector pIB8 - complete.
- E. coli plasmid vector pTL1 - complete.
- E. coli plasmid vector pTL3 - complete.
- E. coli plasmid vector pTL4 - complete.
- E. coli plasmid vector pTL5 - complete.
- E. coli cosmid vector pV34 - complete.
- Vertebrate/E.coli cosmid vector pWE15 - complete.
- E. coli cosmid vector pWE15A - complete.
- E. coli cosmid vector sCos-1 - complete.
- Vertebrate/E.coli cosmid vector cos202 - incomplete.

- Vertebrate/E.coli cosmid vector cos203 - incomplete.
- E. coli cosmid vector cosKT1 - incomplete.
- Human/E. coli cosmid vector HDAB(1S149) - incomplete.
- E. coli cosmid vector HomerI - complete.
- E. coli cosmid vector Lorist6 - incomplete.
- E. coli cosmid vector pAA3H - incomplete.
- Broad host range/E.coli cosmid vector pAD22 - incomplete.
- Saccharomyces/E.coli cosmid vector pBTI-1 - incomplete.
- Saccharomyces/E.coli cosmid vector pBTI-10 - incomplete.
- Saccharomyces/E.coli cosmid vector pBTI-7 - incomplete.
- Saccharomyces/E.coli cosmid vector pBTI-9 - incomplete.
- Higher plants/Agrobacterium/E.coli cosmid vector pC22 - incomplete.
- E. coli cosmid vector pcos1EMBL - incomplete.
- E. coli cosmid vector pcos2EMBL - incomplete.
- E. coli cosmid vector pcos4EMBL - incomplete.
- E. coli cosmid vector pcos5EMBL - incomplete.
- E. coli cosmid vector pcos6EMBL - incomplete.
- Broad host range/E.coli cosmid vector pCVD301 - incomplete.
- Aspergillus/E.coli cosmid vector pDG1 - incomplete.
- E. coli cosmid pDO192 - incomplete.
- E. coli cosmid pDO193 - incomplete.
- E. coli cosmid vector pHSG250 - incomplete.
- E. coli cosmid vector pHSG262 - incomplete.
- Broad host range/E.coli cosmid vector pHSG274 - incomplete.

- E. coli cosmid vector pJB8 - incomplete.
- Broad host range/E.coli cosmid vector pJRD215 - KmR-cos region.
- Aspergillus/E.coli cosmid vector pKBY2 - incomplete.
- Broad host range/E.coli cosmid vector pLA2905 - incomplete.
- Broad host range/E.coli cosmid vector pLA2917 - incomplete.
- Broad host range/E.coli cosmid vector pLA2920 - incomplete.
- Broad host range/E.coli cosmid vector pLAFR1 - incomplete.
- E. coli cosmid vector pMF517 - incomplete.
- E. coli cosmid vector pMF7 - incomplete.
- Broad host range/E.coli cosmid vector pMMB33 - incomplete.
- Broad host range/E.coli cosmid vector pMMB34 - incomplete.
- E. coli cosmid vector pNO1517 - incomplete.
- Actinomyces/E.coli cosmid vector pOJ31 - incomplete.
- Anacystis/E.coli cosmid vector pPUC29 - incomplete.
- Broad host range/E.coli cosmid vector pUCD5 - incomplete.
- Broad host range/Xanthomonas/E.coli cosmid vector pUFR034 - incomp.
- Broad host range/E.coli cosmid vector pVK100 - incomplete.
- Broad host range/E.coli cosmid vector pVK102 - incomplete.
- Vertebrate/E.coli cosmid vector pWE16 - incomplete.
- Drosophila/E.coli cosmid vector smart2 - incomplete.

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Virus Vectors

- Bovine papillomavirus type 1 (BPV-1) genome - complete.
- Mouse Moloney murine leukemia virus MMLV - complete.
- Mouse polyomavirus - complete.
- Monkey virus SV40 - complete.
- Insect baculovirus vector AcMNPV E2 - incomplete.
- Insect virus/E.coli vector BmNPV T3 - incomplete.
- Insect baculovirus vector pAcRP25.Bt - incomplete,protoxin/polyhedrin.
- Insect baculovirus vector pAcRP6 - incomplete, EcoRV-HinfI.
- Insect baculovirus vector pAcUW2.Bt - incomplete, protoxin/p10 prom.
- Insect baculovirus vector pAcYM1 - incomplete, EcoRV-BamHI.
- Vertebrate Japanese encephalitis virus vector NS1 pARAUG - incomplete.
- Vertebrate/E.coli virus vector pSW272 - incomplete.
- Vaccinia virus vector vP-7 - incomplete.
- Vaccinia virus vector vP-8 - incomplete.
- Vaccinia virus vector VTK-79 - incomplete.
- Vaccinia virus vector VTK-79L - incomplete.

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Yeast Artificial Chromosome Vectors

- Saccharomyces/vertebrate/E.coli YAC vector pNN414 - complete.
- Saccharomyces/E.coli YAC vector pYAC2 - complete.
- Saccharomyces/E.coli YAC vector pYAC3 - complete.
- Saccharomyces/E.coli YAC vector pYAC4 - complete.
- Saccharomyces/E.coli YAC vector pYAC5 - complete.
- Saccharomyces/E.coli YAC vector pYAC55 - complete.
- Saccharomyces YAC vector pYACneo - complete.
- Saccharomyces/E.coli YAC vector pYAC-RC - complete.
- Saccharomyces/vertebrate/E.coli YAC vector pCGS966 - incomplete.

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Phage Vectors

- E. coli phage vector lambda EMBL3 left arm - complete.
- E. coli phage vector lambda EMBL3 right arm - complete.
- Bacteriophage f1 - complete.
- Bacteriophage fd - complete.
- E. coli phage vector fd strain 478 - complete.
- E. coli phage vector fd-tet - complete.
- E. coli phage vector fd fKN 16 - complete.
- E. coli phage vector f1 IR1 - complete.
- E. coli phage vector lambda (Styloviridae) - complete.
- E. coli phage vector M13 - complete.
- E. coli phage vector M13BM20 - complete.
- E. coli phage vector M13BM21 - complete.
- E. coli phage vector M13LH1 - complete, MCS.
- E. coli phage vector M13mc18 - complete.
- E. coli phage vector M13mIC7 - complete.
- E. coli phage vector M13mp1 - complete.
- E. coli phage vector M13mp10 - complete.
- E. coli phage vector M13mp11 - complete.
- E. coli phage vector M13mp18 - complete.
- E. coli phage vector M13mp19 - complete.
- E. coli phage vector M13mp2 - complete.
- E. coli phage vector M13mp7 - complete.

- E. coli phage vector M13mp8 - complete.
- E. coli phage vector M13mp9 - complete.
- E. coli phage vector M13plex00 - complete, beta-galactosidase.
- E. coli phage vector M13plex01 - complete, beta-galactosidase.
- E. coli phage vector M13plex05 - complete beta-galactosidase.
- E. coli phage vector M13plex06 - complete, beta-galactosidase.
- E. coli phage vector M13plex07 - complete, beta-galactosidase.
- E. coli phage vector M13plex10 - complete, beta-galactosidase.
- E. coli phage vector M13plex13 - complete, beta-galactosidase.
- E. coli phage vector M13plex17 - complete, beta-galactosidase.
- E. coli phage vector M13plex18 - complete, beta-galactosidase.
- E. coli phage vector M13plex19 - complete, beta-galactosidase.
- E. coli phage vector M13plex20 - complete, beta-galactosidase.
- E. coli phage vector M13tg130 - complete.
- E. coli phage vector M13tg131 - complete.
- E. coli phage vector M13WB23 - complete.
- E. coli phage vector M13WB2341 - complete.
- E. coli phage vector M13WB2342 - complete.
- E. coli phage vector M13WB2344 or M13WB2348 - complete.
- E. coli phage vector M13 PhageScript - complete.
- E. coli plasmid vector pPop6 [tm] - complete.
- E. coli phage vector f1 R199 - complete.
- E. coli phage vector f1 R208 - complete.
- E. coli phage vector f1 R229 - complete.

- E. coli phage vector lambda EMBL12 - incomplete.
- E. coli phage vector lambda EMBL3 AamBam - incomplete.
- E. coli phage vector lambda EMBL3cos - incomplete.
- E. coli phage vector lambda EMBL3-cos-Not - incomplete.
- E. coli phage vector lambda EMBL4 - incomplete.
- E. coli phage vector fd fBH 16 - incomplete.
- E. coli phasmid phage vector lambda 1059 - incomplete.
- E. coli phage vector lambda 2001 - incomplete.
- E. coli phage vector lambda amp3 - incomplete.
- E. coli phage vector lambda BLUEMID- - incomplete.
- E. coli phage vector lambda BLUEMID+ - incomplete.
- E. coli phage vector lambda cIKH100 (IS5) - incomplete.
- E. coli phage vector lambda DASH II - incomplete.
- E. coli phage vector lambda DL10 - incomplete.
- E. coli phage vector lambda DL11 - incomplete.
- E. coli phage vector lambda DR2 - incomplete.
- E. coli phage vector lambda ExCell - incomplete.
- E. coli phage vector lambda FIX II - incomplete.
- E. coli phage vector lambda GEM11 - incomplete.
- E. coli phage vector lambda GEM12 - incomplete.
- E. coli phage vector lambda GEM2 - incomplete.
- E. coli phage vector lambda GEM4 - incomplete.
- E. coli phage vector lambda gt10 - incomplete, near cloning site.
- E. coli phage vector lambda gt102 - incomplete.

- E. coli phage vector lambda gt11 - incomplete, SacI-KpnI + lac/junct.
- E. coli phage vector lambda gt11D - incomplete.
- E. coli phage vector lambda gt11 SciI/NotI - incomplete.
- E. coli phage vector lambda gt22A - incomplete.
- E. coli phage vector lambda gtWES.lambdaB - incomplete.
- E. coli phage vector lambda gtWES.lambda B' - incomplete.
- E. coli phage vector lambda gtWES.T5-622 - incomplete.
- E. coli phage vector lambda MAX1 - incomplete.
- E. coli phage vector lambda MGU1 - incomplete.
- E. coli phage vector lambda MGU2 - incomplete, cloning sites/loxP sit.
- E. coli phage vector lambda N- cI857 r32 - incomplete.
- Vertebrate/E.coli phage vector lambda NMT - incomplete.
- E. coli phage vector lambda plac Mu1 - incomplete.
- E. coli phage vector lambda placMu3 - incomplete.
- E. coli phage vector lambda pMu507 - incomplete.
- E. coli phage vector lambda pMu507.3 - incomplete.
- E. coli phage vector lambda Pop10 - incomplete.
- E. coli phage vector lambda Pop6 - incomplete.
- E. coli phage vector lambda SE4 - incomplete.
- E. coli phage vector lambda SE5 - incomplete.
- E. coli phage vector lambda SE6 - incomplete.
- E. coli phage lambdaSK17 - incomplete.
- E. coli phage lambdaSK20 - incomplete.
- E. coli phage lambdaSK22 - incomplete.

- E. coli phage lambdaSK23 - incomplete.
- E. coli phage vector lambda SurfZAP - incomplete.
- E. coli phage vector lambda ZAP Express - incomplete.
- E. coli phage vector lambda ZAP II - incomplete.
- Vertebrate/E.coli phage vector lambda ZD31 - incomplete.
- Vertebrate/E.coli phage vector lambda ZD32 - incomplete.
- Vertebrate/E.coli phage vector lambda ZD35 - incomplete.
- E. coli phage vector lambda ZipLox - incomplete.
- E. coli phage vector M13bla6 - incomplete.
- E. coli phage vector M13bla cat1 - incomplete.
- E. coli phage vector M13Gori1 - incomplete.
- E. coli phage vector M13K07 - incomplete.
- E.coli phage M13mp7-14 - incomplete, yeast DNA/pJD221 5'.
- E. coli phage vector M13.SV.8 - incomplete, SV40 early promoter.
- E. coli phage vector M13.SV.B11 - incomplete, SV40 early promoter.
- E. coli phage vector M13.SV.B12 - incomplete, SV40 early promoter.
- E. coli phage vector M13tg103 - incomplete, 5' end of lacZ gene.
- E. coli phage vector M13tg114 - incomplete, 5' end of lacZ gene.
- E. coli phage vector M13tg115 - incomplete, 5' end of lacZ gene.
- E. coli phage vector M13tg117 - incomplete, 5' end of lacZ gene.
- E.coli phage vector M13um20 - incomplete.
- E. coli plasmid vector pPop10 [tm] - incomplete.
- E. coli phage vector lambda Syrinx 2A - incomplete.
- Streptomyces phage vector TG1 - incomplete.

Streptomyces phage vector TG2 - incomplete.

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APPENDIX

Vector db

VectorDB contains annotations and sequence information for many vectors commonly used in molecular biology. Information for more than 2600 vectors is available with search facilities. Vectors which are also in GenBank have direct links to that database via NCBI's Entrez browser!

The Vectors

- Phage Vectors
- Plasmid Vectors
- Phagemid Vectors
- Phasmid Vectors
- Cosmid Vectors
- Virus Vectors
- YAC Vectors

Organism Subsets

- Vectors for *Drosophila*
- Vectors for *C. elegans*
- Vectors for Yeast

Search Vector db

- Search VectorDB

Vector Spotlight

- Advertise your vector here!

Other Things

- Other Vector Resources
- Contribute a Vector

Access statistics (updated hourly) indicate [x] users since September 1, 1995.

Stay tuned for more vectors and vector descriptions!!
Your comments are appreciated. Email miseners@Biology.QueensU.CA

Stephen Misener

Biotech Companies Online with VectorDB

VectorDB was last updated: August 10, 1996.